

BACKGROUND OF THE INVENTION

A. Field of the Invention

This invention relates to electronic commerce and, more particularly, to an incentive network that provides systems, apparatus, and methods for distributing incentives on a network-wide basis and for permitting user access to incentives from any network server, thereby improving the incentive distribution and redemption processes.

B. Description of the Related Art

The Internet has been hailed the marketplace of the future, a result of its accessibility and usability. A computer equipped with a communication mechanism such as a modem and telephone connection is nearly all that is necessary to gain access to the Internet. A program called a browser, recently incorporated as part of at least one computer operating system, *i.e.*, Windows 95 from Microsoft Corp., makes it a simple task to traverse the vast network of information available on the Internet and, specifically, its subpart known as the "World Wide Web," or more simply, "the Web."

The architecture of the Web follows a conventional client-server model. The terms "client" and "server" are used to refer to a computer's general role as a requester of data (the client) or provider of data (the server). Under the Web environment, Web browsers reside in clients and specially formatted "Web documents" reside on Internet

(Web) servers. Web clients and Web servers communicate using a protocol called "HyperText Transfer Protocol" (HTTP).

In operation, a browser opens a connection to a server and initiates a request for a document. The server delivers the requested document, typically in the form coded in a standard "HyperText Markup Language" (HTML) format. After the document is delivered, the connection is closed. The browser displays the document or performs a function designated by the document.

Every day, more people gain access to the Web, and every day, more of them are shopping online. Online shopping provides a level of convenience they want, need and will soon demand. Electronic commerce or "e-commerce" is the term often used to refer, at least in part, to online shopping on the Web. E-commerce is a unique opportunity for businesses of any size. E-commerce can expand a company's marketplace--and consequently, its customer database. By simply providing a Web server having information on the company's product offerings and the customer database, and linking the Web server to the Web, the company can track visits, sales, buying trends and product preferences--all at the customer level. The company can then present its customers with products they are most likely to buy--on an individual basis. For this reason alone most marketing professionals consider the Web to be one of the best direct marketing tools.

5 But the number of retailers with online stores is growing exponentially every year, making it increasingly difficult for online shoppers to navigate the Web to locate particular products at the best prices. At one site, called the "Internet Mall," online shoppers can browse through more than 20,000 "virtual stores." This challenge for consumers also introduces a problem for merchants in designing campaigns to attract consumers to the merchants' Web sites and away from their competitors' sites.

10 In the past, even before the Web, companies explored a number of options for attracting consumers to purchase their products. One method often used for this purpose is an incentive program. Companies would offer incentives, including awards, discounts, coupons, points, and similar devices, to induce consumers to purchase particular products. Applying this marketing device to the Web is a significant challenge because of the enormous size of the Web and its online shopping Web sites.

15 Some incentive companies provide their own Web sites where consumers can access, view, and use their incentives. But distribution for purposes of achieving consistent usage is the significant challenge for companies offering online access to incentives. For any incentive campaign to be effective it needs to reach the largest number of potential consumers, regularly remind them of the availability of the incentives, and not be overly intrusive. Furthermore, targeting the incentives based on individual consumer preferences will yield even better results. For example, if an

incentive campaign designed to lure consumers to purchase a particular computer is going to be successful, the campaign should reach the maximum possible number of consumers interested in purchasing computer products. In all known online implementations for distributing incentives, however, consumers must access either a merchant's Web site or the Web site of an incentive company to retrieve the incentives.

Accordingly, there is a need for a system that provides network-wide access to incentives, thus increasing the effectiveness of online marketing campaigns.

SUMMARY OF THE INVENTION

Methods, systems, and articles of manufacture consistent with the present invention overcome the shortcomings of existing systems for electronically distributing incentives by providing an incentive network equipped with methods for distributing incentives on a network-wide basis and for permitting user access to individual incentives from any network server. An incentive network like this improves the incentive distribution and redemption processes.

In accordance with one aspect of the invention, as embodied and broadly described herein, a method performed by a server for accessing incentives in an network, comprises steps of receiving an access request from a device associated with a user and connected to the network, transmitting identifying information corresponding to the access request to a host, receiving incentive information from

the host reflecting available incentives corresponding to the identifying information, and transmitting a network document, including the incentive information, to the device associated with the user in response to the access request. The step of receiving an access request from a device associated with a user may include receiving a request for a document containing data stored at least in part on the server. The step of transmitting identifying information corresponding to the access request to a host may include determining whether an indication exists that the user subscribes to receive information associated with available incentives. The step of determining whether an indication exists that the user subscribes to receive information associated with available incentives may include transmitting a subscriber request to the device associated the user, and receiving a response from the device associated with the user, including a subscriber ID. The step of transmitting identifying information corresponding to the access request to a host may include transmitting a subscriber ID corresponding to the device associated with the user to the host and an server ID corresponding to the server. The step of receiving incentive information from the host reflecting available incentives corresponding to the identifying information may include receiving incentive information reflecting a selection of incentives based on at least one of the subscriber ID and the server ID. The step of receiving incentive information from the host reflecting available

5

10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
105
110
115
120
125
130
135
140
145
150
155
160
165
170
175
180
185
190
195
200
205
210
215
220
225
230
235
240
245
250

incentives corresponding to the identifying information may include transmitting a subscriber ID corresponding to the device associated with the user to the host.

5 In accordance with another aspect of the present invention, as embodied and broadly described herein, a computer-implemented method for accessing incentives in an network, comprises transmitting an access request to access a server in the network, receiving a subscriber request for a subscriber ID associated with the access request, transmitting the subscriber ID to the server, and receiving in response to the access request incentive information reflecting available incentives corresponding to the subscriber ID, wherein the server provides the subscriber ID to a host that selects and transmits the incentive information to the server. The step of transmitting an access request to access a server in the network may includes providing a browser enabling a user to formulate and transmit the access request. The step of receiving in response to the access request incentive information reflecting available incentives corresponding to the subscriber ID, wherein the server provides the subscriber ID to a host that selects and transmits the incentive information to the server, may include receiving selected incentive information reflecting a server ID associated with the server, wherein the server provides the server ID to the host for selection of the incentive information.

20 In accordance with yet another aspect of the invention, a system is provided for serving individual account information from a central host computer to a plurality

of intermediate host computers that will transmit the information to a plurality of client computers.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate an implementation of the invention and, together with the description, serve to explain the advantages and principles of the invention. In the drawings,

FIG. 1 is a pictorial diagram of a computer network in which systems consistent with the present invention may be implemented;

FIG. 2 shows a computer network containing a client system and a server system;

FIG. 3 illustrates the retrieval of remote text and images and their integration in a document;

FIG. 4 is an operational flow diagram illustrating an incentive distribution process in a manner consistent with the principles of the present invention;

FIG. 5 is a flow chart of the steps performed by a server participating in the incentive network to distribute incentives in a manner consistent with the principles of the present invention;

FIG. 6 is a flow chart of the steps performed by an incentive host server to facilitate distributed access to incentives in a manner consistent with the principles of the present invention; and

FIG. 7 is a flow chart of the steps performed by the incentive host server for creating subscriber accounts for incentives in a manner consistent with the principles of the present invention.

DETAILED DESCRIPTION

Reference will now be made in detail to an implementation consistent with the present invention as illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings and the following description to refer to the same or like parts.

Introduction

Systems consistent with the present invention implement an incentive network for distributing incentives on a network-wide basis and for permitting user access to individual incentives from any network server. The incentive network designed in accordance with the principles of the present invention improves the incentive distribution and redemption processes. The incentive network includes at least one incentive host server and a plurality of incentive network servers. By providing in each incentive network server an access mechanism to the incentive host server, client systems requesting documents from an incentive network server are presented with

information on selected incentives. When a user operating a client system requests a document from a server participating in the incentive network, the access mechanism determines whether the client system is identified by a unique subscriber identification (ID) corresponding to a subscriber to the incentive network.

5 If no ID is present in the client system, the access mechanism presents in the requested document a tool through which the user may subscribe to the incentive network. If the ID exists on the client system then the incentive network server uses the ID to access the incentive host server and retrieve and display information on incentives currently available to the subscriber. This makes the information on available incentives accessible to the subscriber throughout the incentive network. It also permits a subscriber to redeem a selected incentive from anywhere in the network by simply including in the document requested from the incentive network server both information on the available incentives and information on how to redeem them. For example, the document may include a link to another server, which may or may not be a part of the incentive network, at which the incentive may be applied to an online purchase.

Network Architecture

20 Figure 1 illustrates a conceptual diagram of a computer network 100, such as the Internet. Computer network 100 comprises small computers (such as computers 102, 104, 106, 108, 110 and 112) and large computers (such as servers 120 and 122).

In general, small computers are "personal computers" or workstations and are the sites at which a human user operates the computer to make requests for data from other computers or servers on the network. Usually, the requested data resides in large computers. In this scenario, small computers are clients and the large computers are servers.

In this specification, the terms "client" and "server" are used to refer to a computer's general role as a requester of data (client) or provider of data (server). In general, the size of a computer or the resources associated with it do not preclude the computer's ability to act as a client or a server. Further, each computer may request data in one transaction and provide data in another transaction, thus changing the computer's role from client to server, or vice versa.

A client, such as computer 102, may request a file from server A 120. Since computer 102 is directly connected to server A 120, for example, through a local area network, this request would not normally result in a transfer of data over what is shown as "network" of FIG. 1. The "network" of FIG. 1 represents, for example, the Internet, which is an interconnection of networks. A different request from computer 102 may be for a file that resides in server B 122. In this case, the data is transferred from server B 122 through the network to server A 120 and, finally, to computer 102. The distance between server A 120 and server B 122 may be very long, e.g. across continents, or very short, e.g., within the same city. Further, in traversing the network

the data may be transferred through several intermediate servers and many routing devices, such as bridges and routers.

Figure. 2 shows, in more detail, an example of a client-server system interconnected through network 100. In this example, a remote server system 222 is interconnected through network 100 to client system 220. Client system 220 includes conventional components such as a processor 224, memory 225 (e.g. RAM), a bus 226 which couples processor 224 and memory 225, a mass storage device 227 (e.g. a magnetic hard disk or an optical storage disk) coupled to processor 224 and memory 225 through an I/O controller 228 and a network interface 229, such as a conventional modem.

Server system 222 also includes conventional components such as a processor 234, memory 235 (e.g. RAM), a bus 236 which couples processor 234 and memory 235, a mass storage device 237 (e.g. a magnetic or optical disk) coupled to processor 234 and memory 235 through an I/O controller 238 and a network interface 239, such as a conventional modem. It will be appreciated from the description below that the present invention may be implemented in software which is stored as executable instructions on a computer readable medium on the client and server systems, such as mass storage devices 227 and 237 respectively, or in memories 225 and 235 respectively.

Distributed Document Retrieval

5 The Internet consists of a worldwide computer network that communicates using a well-defined protocol known as the Internet Protocol (IP). Computer systems that are directly connected to the Internet each have a unique address consisting of four numbers separated by periods such as "192.101.0.3". To simplify Internet addressing, a "Domain Name System" was created that allows users to access Internet resources with a simpler alphanumeric naming system. For example, the name "usatoday.com" is the name for a computer operated by the USA TODAY newspaper.

10 To further define the location of resources on the Internet, a Uniform Resource Locator system was created that uses a Uniform Resource Locator (URL) as a type of "address" that specifically defines a type of Internet resource, such as a Web document and its location. URLs have the following format: "resource-type: // domain.address/ path-name." The "resource-type" defines the type of Internet resource. Web documents, for example, are identified by the resource type "http", which indicates the protocol used to access the document.

15 To access a document on the Web, the user enters a URL for the Web document into a browser program executing on a client system having a connection to the Internet. The Web browser then sends the document's URL in a request in accordance with the HTTP protocol to the Web server that has the Web document.

20 The Web server responds to the request by transmitting the requested object to the

client. In most cases, the object is a plain text document containing text (in ASCII) that is written in HTML. Such objects often contain "hyperlinks," URLs to other Web documents. The Web browser displays the HTML document on the screen for the user including the hyperlinks to other Web documents in a different color, or otherwise emphasized, such that the user can select the hyperlink.

In some instances, the HTML document may contain data from more than one server. For example, FIG. 3 illustrates the retrieval of remote text and images and their integration in a Web document by a client system 340. In FIG. 3, server A 310 contains an image 315, server B 320 contains a combination of text and image data 325 and server C 330 contains text data 335. Each of these servers is remotely located from the other servers and client 340. The transfer of data is via network 100. It should be appreciated that the text and image files could be located in the same server which is remote from client 340.

Different techniques are available to display these types of composite Web documents. For example, a program called a servlet executing on one of the servers may combine data from the various servers referenced in a selected Web document and transmit the composite Web document to the client. In other configurations, the client may utilize a program called an applet, which may be transmitted to the client from one of the servers, to access the multiple servers offering parts of the composite and to build the composite Web document.

Network-Wide Access to Incentives

Figure 4 is an operational flow diagram illustrating an incentive distribution process in a manner consistent with the principles of the present invention. In accordance with the principles of the present invention, an incentive network is comprised of at least one incentive host server and a plurality of incentive network servers. Each one of the incentive network servers may be an existing server on the Web or a new server to the Web configured to be a part of the incentive network.

As shown, incentive host server 410 includes an incentive server database 412, a distribution process subsystem 414, and a subscriber registration subsystem 416. Preferably, distribution process subsystem 414 comprises instructions defining a task running on a processor of host server 410. Incentive network server 420 includes a network incentive process subsystem 422 and storage 424 for storing a Network Server ID. Client system 430 includes browser program 430 and storage 434 for a subscriber ID.

When a user operating client system 430, which is executing browser program 432 such as "Navigator" from Netscape Corp., accesses incentive network server 420 to retrieve a Web document, network incentive process subsystem 422, sends a request to client system 430 for a stored subscriber ID. Assuming such an ID exists in storage 434, client system 430 transmits the ID to server 420. This request-response mechanism may be implemented in various ways, including as an applet

program that server 420 transmits to system 430 upon initial access to server 420. In this implementation, the applet program searches system 430 for the ID, which may be stored in a "cookie," and sends a response, including the ID if present, to server 420.

5 When server 420 receives a subscriber ID, server 420 transmits the subscriber ID, and optionally the Network Server ID for server 420 held in storage 424, to incentive host server 410. Server 410 in turn uses subsystem 414 to access database 412 and locate a subscriber account, which includes information on incentives available to the subscriber based on the subscriber ID. In the situation in which the Network Server ID is transmitted, process 414 may use the Network Server ID to look in Incentive Server Database 412 for a list of specific incentives to be excluded or included based on the Network Server ID, and filter the incentives in the subscriber's account in accordance with the list before transmitting them to Network Server 420. In this fashion, Incentive Server 410 manages an exclusion list for each Incentive Network Server 420 and transmits specific incentives based on the list.

In a separate operation, discussed below with reference to FIG. 7, users subscribe to the incentive network by opening accounts with the incentive host server. At the successful completion of an account creation process, a subscriber ID is downloaded to the client system and stored there by the client system 430.

After server 410 locates information on incentives available to the subscriber, subsystem 414 responds to the request from server 420 with information on the available incentives for the subscriber. Subsystem 422 can then transmit the incentive information to client system 430 for display by browser 432.

Network Incentive Process Subsystem

Figure 5 is a flow chart of the steps performed by a server participating in the incentive network, such as server 420 of FIG. 4, to distribute incentives in a manner consistent with the principles of the present invention. After a client system requests access to an incentive network server of the incentive network to retrieve a document (step 510), the network incentive process subsystem transmits a request for a subscriber ID stored in the client system (step 515). The subsystem then receives a response (step 520), and if an ID is present in the response (step 525), the subsystem transmits a request to the incentive host server with the ID from the client computer and optionally a Network Server ID associated with the subsystem's server (step 530). The intermediate server then receives a response from the incentive host server, including information on selected incentives currently available to the subscriber (step 535). Once it obtains the information on selected incentives, the incentive network server builds a document and transmits the document including information initially requested by the client system of the incentive network server along with the incentive information (retrieved from the incentive host server) to the client system

(step 540). In this fashion, subscribers to the incentive network can access their incentives from any server in the incentive network.

If no subscriber ID exists (step 525), then the intermediate server transfers control to the incentive host server and the process continues with the account creation module (step 545), which is described below with reference to Fig. 7.

Incentive Host Server

As shown in FIG. 4, the incentive host server has two components: an incentive distribution process subsystem, and a subscriber registration subsystem.

Incentive Distribution

Figure 6 is a flow chart of the steps performed by the distribution process subsystem in a manner consistent with the present invention. After the incentive server receives a request from a server participating in the incentive network including a subscriber ID and optionally the Network Server ID (step 610), the incentive server locates information on any available incentives that are said to be "in the subscriber's account," *i.e.*, stored in the incentive database and associated with the subscriber ID (step 620). When a Network Server ID is provided, the incentive server may also locate an exclusion or inclusion list for the identified server and apply the list to filter in or out specific incentives. Once the incentive information is located, and the optional filtering is performed, the incentive host server transmits the incentive information to the requesting incentive network server (step 630).

Account Creation

Figure 7 is a flow chart of the steps performed by the incentive host server for creating subscriber accounts for incentives in a manner consistent with the principles of the present invention. In a process separate from the scheme outlined to provide network-wide access to incentives, the incentive host server provides a subsystem for creating subscriber accounts. As a first step in the process, a user accesses the incentive host server and indicates interest in subscribing to the incentive network (step 710). The server then transmits a registration form to the subscriber (step 720). Once the user completes the form (step 730) and transmits the completed form to the server (step 740), the server transmits a unique subscriber ID to the client system used in the account creation process and stores the ID on the client system for future use in accordance with the process described herein to distribute incentives on a network-wide basis. At a minimum, a subscriber's account information should include some identifier used to distinguish subscribers, for example, a electronic mail address. The account information may also include demographic and personal information corresponding to the subscriber.

Conclusion

An incentive network implemented in a manner consistent with the present invention thus facilitates network-wide access to incentive programs. By providing in each network server an access mechanism to the incentive server, client systems

requesting documents from a network server are presented with information on selected incentives. For example, a consumer who frequents more than one general http site (often referred to as "Web portals") such as Yahoo.com and USAToday.com may access his/her available incentives through both those sites. This increases the consumer's exposure and access to the incentives without being intrusive. It also facilitates the provision of personalized information for the consumer on both sites without the need to create separate accounts on each site.

The foregoing description of an implementation of the invention has been presented for purposes of illustration and description. It is not exhaustive and does not limit the invention to the precise form disclosed. Modifications and variations are possible in light of the above teachings or may be acquired from practicing of the invention. For example, the described implementation includes software but the present invention may be implemented as a combination of hardware and software or in hardware alone. The invention may be implemented with both object-oriented and non-object-oriented programming systems. Additionally, although aspects of the present invention are described as being stored in memory, one skilled in the art will appreciate that these aspects can also be stored on other types of computer-readable media, such as secondary storage devices, like hard disks, floppy disks, or CD-ROM; a carrier wave from the Internet or other propagation medium; or other forms of RAM or ROM. The scope of the invention is defined by the claims and their equivalents.